

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Rolf SKOLD

Application No.: 09/381,828

Confirmation No.: 4478

Filed: November 24, 1999

Art Unit: 1743

For: THE CHARACTERISATION OF PHYSICAL
AND CHEMICAL PROPERTIES OF A LIQUID
AND A DEVICE THEREFOR

Examiner: A. Soderquist

REPLY BRIEF

MS Reply Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

As required under § 41.41(a)(1) and/or § 41.43(b), this brief is being timely filed within two months from the August 23, 2007, mailing date of the Examiner's Answer, and is in furtherance of the present Appeal.

This brief contains items under the following headings as required by 37 C.F.R. § 41.37(c) and M.P.E.P. § 1208:

- I. Status of Claims (page 2)
- II. Status of Amendments (page 3)
- III. Grounds of Rejection to be Reviewed on Appeal (page 4)
- IV. Arguments (pages 5-15)

I. STATUS OF CLAIMS

A. Total Number of Claims in Application

There are 18 claims pending in application.

B. Current Status of Claims

1. Claims canceled: none
2. Claims withdrawn from consideration but not canceled: none
3. Claims pending: 1-18
4. Claims allowed: 3 and 9
5. Claims rejected: 1, 2, 4-8, 10-18

C. Claims On Appeal

The claims on appeal are claims 1, 2, 4-8 and 10-18.

II. STATUS OF AMENDMENTS

Regarding section (4) of the Examiner's Answer, the Examiner has agreed with Appellant's previous "Status of Amendments" as shown in the Appeal Brief filed April 30, 2007.

III. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

As to the grounds of rejection on appeal, the Examiner's Answer, section (6) is in agreement with the previously filed Appeal Brief.

Claims 1, 2, 4-8, 10-12, 14-15 and 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over **Tondre et al.** (*J. Dispersion Science and Technology*, Vol. 7(5), pp. 581-597 (1986)) in view of **Rouse et al.** (*JAOCS*, Vol. 71, No. 1, pp. 37-42 (1995)) and **Dombay et al.** (*Proc. Conf. Colloid Chem. Mem.* (1988)), **Hagan et al.** (*Review of Scientific Instruments*, Vol. 58, pp. 468-474 (1987)), **Nitta** (*Fluid Phase Equilibria*, Vol. 53, pp. 105-1121(989)), **Streett** (*Pure and Applied Chemistry*, Vol. 61, pp. 143-152 (1989)) or **Yan** (*Analytica Chimica Acta*, Vol. 234, pp. 493-497 (1990)). (This is a total of at least 5 rejections).

Also, claims 12-13 and 16-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over **Tondre et al.** in view of **Rouse et al.** and **Dombay**, **Hagan et al.**, **Nitta**, **Streett** or **Yan** as applied to claims 1, 2, 4-8, 10-12, 14-15 and 18, and further in view of **Khomutov et al.** (*Carbohydrate Polymers*, Vol. 28, pp. 341-345 (1995)), **Ohno et al.** (*Macromolecules*, Vol. 18, pp. 1287-1291 (1985)) or **Subbaramaiah** (*Current Science*, Vol. 8, p. 360 (1939)). (This is a total of at least 15 rejections).

The above rejections are being appealed. Thus, whether claims 1, 2, 4-8 and 10-18 are patentable under 35 U.S.C. § 103(a) over the various cited combinations of references are the grounds of rejections being reviewed on appeal.

VII. ARGUMENT

The main issues of the appealed application concern how a *prima facie* case of obviousness has not been established with respect to the multiple rejections under 35 U.S.C. § 103(a). These issues were addressed by Appellant on pages 15-58 (of 66) of the Appeal Brief filed on April 30, 2007.

In response to the Appeal Brief, the Examiner has issued an Examiner's Answer ("Answer") on August 23, 2007. This Reply Brief addresses the Examiner's contentions and statements from the Answer.

In section (9) of the Answer, the Examiner literally repeats the rejections from the Final Office Action October 31, 2006, paragraphs 2-3, spanning pages 2-8. Also in the Answer, the Examiner provides new comments in section (10) at pages 9-17. However, Appellant's position has been oversimplified or misinterpreted.

In response to the various comments in the Answer, Appellant has stressed and respectfully maintains that the Examiner has not given sufficient reasons as to why the skilled artisan, confronted with the same problems as the inventor *and with no knowledge of the claimed invention*, would select the elements from the cited prior art references for combination in the manner claimed (see Appeal Brief, page 9). Appellant also presented *specific reasons* as to why the present rejections are improper throughout the Appeal Brief, including sections (B)(xii)-(xvii) and (C) starting at page 33-56 (e.g., it not simply an issue of "automation" as asserted by the Examiner considering the many features involved in the claimed invention; the present

invention uses a control program for concentration, a control program for temperature, and then the various data is collected, stored and converted into, e.g., the three-dimensional diagram, which are not disclosed by the cited references or combinations thereof; Tondre as the primary reference does not make such a suggestion to use its “diluter programmer” to attain “the values obtained for the dependent properties are combined with the values for the independent properties to measuring points and stored electronically in a computer” as instantly claimed), wherein any one of the reasons shows the impropriety of the appealed rejections. However, in the August 23rd Answer, the Examiner has not addressed all of Appellant’s arguments, and only focuses on a few of the arguments presented in the Appeal Brief.

The Examiner’s key points as stated in the Answer is that the primary reference of Tondre discloses all claimed features except for the use of a computer/automation (see the paragraph bridging pages 9-11 of the Answer). The secondary references are cited to account for such deficiencies of the primary reference (see the Answer at page 10, lines 4-10). The Examiner has not discussed the entire disclosures of the references, and oversimplified the problems in the art and the Appellant’s solution thereto.

For instance, as just one instance of failing to account for all claimed features with the asserted combinations of references, step 2) in appealed claim 1 recites “determining by calculation the values for the component concentration in the measuring cell based on data from a control program for the change of component concentration” (see also page 18, first paragraph of the Appeal Brief). The Examiner has not sufficiently accounted for this element, but is instead referring to vast portions of the secondary reference to account for such deficiency of Tondre. Appellant notes that the control program for the change of component concentration is a

software program that performs a specific function(s), and none of the cited references of Rouse, Dombay, etc., discloses such a feature.

As another instance, Appellant has emphasized how the present invention is significantly different in aim, method and equipment versus that in Tondre, Rouse, and the other references of Dombay, Hagan, etc., as explained in detail in the Appeal Brief. In fact, nothing is mentioned in the Examiner's Answer regarding the teaching away and inconsistent disclosure (from the present invention) that is present in Tondre. As stated starting at page 22 of the Appeal Brief, the object and aim of Tondre is to find solubilizing "horns" in diagrams (see page 583, "Experimental set-up" section, in the subsection "Principle"), wherein at the same time the authors state that it is probably unrealistic to dream of a method that could be applied to any mixtures of water, oil and tensioactive agents (see page 582, see the full second and third paragraphs). On the same page, last paragraph, Tondre *et al.* also state that they are not interested in using titration by one of the components at a fixed temperature, because of the low amount of information obtained (pages 594-595).

Besides the problems with Tondre itself, Appellant have emphasized how one of ordinary skill in the art would not combine any of the cited secondary references with Tondre in order to achieve what is instantly claimed. For instance, the Rouse additions of oil and cosurfactant are unpredictable in nature (see starting at the bottom of page 25 of the Appeal Brief).

Though the Examiner again cites *In re Keller* and *In re Merck & Co.* starting at page 11, last paragraph of the Answer, the Examiner misses the point of Appellant's arguments. The Examiner's statement in the Final Office Action or the Answer regarding that the combination of disclosures suggest to one of ordinary skill in the art as being the proper test is assuming that the

references could be properly combined in the first place, wherein Appellant is traversing that the references could be properly combined in the first place. It is not even clear as to how a computer can be attached to the Tondre method and somehow equals the present invention.

Also regarding the paragraph bridging pages 11-12 of the Answer, the Appellant respectfully requests the honorable Board to review the appealed claims in view of Appellant's previous arguments. Appellant has repeatedly relied on claimed features to rebut the Examiner's various rejections.

Further, Appellant has previously argued, and the Examiner has not even accounted for Appellant's arguments of record with respect to the inconsistencies between Tondre and the various secondary references. For instance, Appellant has stated the measurements in Rouse are all made at a fixed temperature, which means that temperature is not even considered a variable (see, e.g., page 26, last paragraph of the Appeal Brief). As another instance, the diagrams in Hagan lack both temperature and concentration as independent variables (see page 29, first full paragraph of the Appeal Brief). As yet another instance, Nitta, Streett and Yan disclose PCT phase diagrams or multivariate functions from a theoretical point of view, but each of the references fails to describe any methods or devices suitable for collecting any data to be included in such diagrams or functions. Thus, for the Examiner to state: "Just because Appellant feels or believes the reference combinations to be improper, does not relieve Appellant of the need to argue the combinations," Appellant respectfully submits that this has not been the case. Appellant has submitted detailed reasons as to why the Examiner's combinations of references are improper in the Appeal Brief.

As mentioned, the Examiner emphasizes how Tondre teaches the present invention except the use of a computer (which is not true as stated above; Appellant notes the Tondre description of, e.g., how the authors are not interested in using titration by one of the components at a fixed temperature, because of the low amount of information obtained), and that the secondary references provide a basis to account for the deficiency of Tondre. But as explained above, the Examiner has not accounted for all of Appellant's arguments of record, which include such inconsistencies between Tondre and the disclosures of the multitude of secondary references. Such arguments should thus be taken as not rebutted by the Examiner.

Further, the combinations of references suggested by the Examiner are not in accordance with the teachings of the references, but are instead based on personal knowledge of the present invention. The question here is if a person skilled in the art (a person with no capacity to make patentable inventions) and with no knowledge of the actual invention would have found it obvious, guided by the disclosure in the references (if the references are properly referred to in the first place), to combine them in such a manner that all the necessary characteristics of the invention were revealed. If the references do not disclose all the necessary characteristics then no proper combination can be made. This is the instant situation. The Examiner has not taken this initial point of view, and instead much hindsight reconstruction has been improperly applied.

Appellant additionally notes the comments in the Answer at the paragraph bridging pages 15-16. Appellant respectfully submits that the Examiner's position, especially regarding automation, loses the proper focus on what the references really disclose or teach as discussed above (e.g., Rouse uses additions of oil and cosurfactant (to attain a solution that eventually becomes clear) that are essentially unpredictable in nature; the diagrams in Hagan lack both

temperature and concentration as independent variables; etc.). Regarding the citation of *In re Venner*, Appellant notes the discussion in the Appeal Brief at 34-36. The Examiner's reliance on *In re Venner* is improper since there are multiple manual activities that would have to be "broadly" automated, and there is no "same result" as that of the present invention based on the disclosures of the cited references. The solution to the problems in the art is not as simple as the Examiner is asserting. Additionally, Appellant notes the passage from M.P.E.P. § 2144.04(III) as discussed in the Appeal Brief at pages 34-35.

Overall, the Examiner's Answer focuses on repeating the outstanding rejections with the same U.S. case law versus addressing the individual arguments of record as presented by the Appellant. Appellant has submitted lengthy discussions of the individual references (which include many inconsistencies between the disclosures thereof) with various reasons as to why the appealed rejections are improper.

Appellant is aware that the standard for obviousness has recently changed, wherein the teaching, suggestion, motivation test is a valid test for obviousness but one which cannot be too rigidly applied. *See KSR International Co. v Teleflex Inc.*, 82 USPQ2d 1385, 1395 (U.S. 2007). Thus, case law cited in the Appeal Brief may have been overturned due to the Supreme Court decision (see, e.g., the reference to *In re Vaeck* at page 17, lines 5-6; the reference to *Merck v. Biocraft* at page 43, lines 3-5). However, it is believed that most of the Appeal Brief is otherwise in compliance with current U.S. patent law and practice (see, e.g., sections (B)(xiv)-(xv) at pages 43-47 that refer to *In re Oetiker* for nonanalogous arts and *McGinley* for inoperability).

Graham v. John Deere, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966) has provided the controlling framework for an obviousness analysis. A proper analysis under § 103(a) requires consideration of the four *Graham* factors of: determining the scope and content of the prior art; ascertaining the differences between the prior art and the claims that are at issue; resolving the level of ordinary skill in the pertinent art; and evaluating any evidence of secondary considerations (e.g., commercial success; unexpected results). 383 U.S. at 17, 148 USPQ at 467. The *Graham* factor of secondary considerations has been addressed in the Appeal Brief at pages 51-56. As a related matter, the Examiner's comments in the Answer at page 16, first full paragraph repeat the same comments from the Final Office Action. However, Appellant has answered the Examiner's questions/inquiries (please see the Appeal Brief, section (C) at page 51-56). For instance, the Examiner questions if there was a discount on price since a discount is a motivating factor (see the Answer at page 16, lines 3-5). However, Appellant notes the Appeal Brief at page 55, third paragraph, which already answers this question.

The Examiner also asserts that the commercial success is not commensurate in scope with the claims. Appellant notes the lengthy discussions in the Appeal Brief. Further, Appellant notes *In re Tiffin*, 448 F.2d 791, 171 USPQ 294 (CCPA 1971) and M.P.E.P. § 716.03(a). This part of the M.P.E.P., which cites the *Tiffin* case, states:

Objective evidence of nonobviousness including commercial success must be commensurate in scope with the claims. *In re Tiffin*, 448 F.2d 791, 171 USPQ 294 (CCPA 1971) (evidence showing commercial success of thermoplastic foam "cups" used in vending machines was not commensurate in scope with claims directed to thermoplastic foam "containers" broadly). In order to be commensurate *>in< scope with the claims, the commercial success must be due to claimed features, and not due to unclaimed features. *Joy Technologies Inc. v. Manbeck*, 751 F. Supp. 225, 229, 17 USPQ2d 1257, 1260 (D.D.C. 1990), *aff'd*, 959 F.2d 226, 228, 22 USPQ2d 1153, 1156 (Fed. Cir. 1992) (Features responsible

for commercial success were recited only in allowed dependent claims, and therefore the evidence of commercial success was not commensurate in scope with the broad claims at issue.).

The facts here do not pertain to a “cup” versus a “container.” The commercial success as discussed in the previously filed Rule 132 Declaration pertains to specific embodiments of the claimed invention. The attached invoices also refer to turbidity, pH, etc., which correspond to features 1) and 5) of appealed claim 1 or feature a), subsection iii) of claim 7. The invoices are evidence that corresponds to what is being claimed, wherein Appellant is not relying merely on the inventor’s opinion. The presently claimed invention enjoys commercial success due to its solutions for drawbacks in the art (e.g., quick and ready access to physical and chemical data over an extensive range of temperatures and concentrations that give rapid indications regarding temperature-concentration ranges of particular interest), its unexpected advantages (e.g., how the possibility of quantitatively identifying critical transition concentrations and temperatures and other characteristics on an extensive temperature-composition surface simultaneously in the same vessel) and its convenience (e.g., quick visualization of data in three dimensional graphs that adds to the ease and speed of data examination and information transfer). The Examiner is requiring proof of the negative of all imaginable contributing factors, which would be unfairly burdensome to any patent applicant (or appellant).

Regarding the Examiner’s Answer at the paragraph bridging pages 16-17, Appellant respectfully maintains that the Examiner’s findings have not clearly articulated as to which portions of the reference support any of the rejections, the determinations under 35 U.S.C. § 103

have not rested on all the evidence, and/or the determinations have been influenced by any earlier conclusions from the previous Office Actions.

Further, the prosecution history does have a bearing on the Examiner's position for this application.

In summary, Appellant takes this opportunity to emphasize that the object and aim of the present invention is to achieve a "fully" automated process for a speedy characterization of a physical or chemical property or properties in three-dimensional form as a function of concentration and temperature. For a person of ordinary skill in the art and seeking a solution of the problem of the present invention, Tondre would not have been of any specific interest, since Tondre is not concerned with a fully automated process or with three-dimensional diagrams. Also, in Tondre, the concentration is not recorded as such, but manually calculated. In addition, the changes of turbidity (with no exact values) are estimated and used in order to find solubilising "horns" in diagrams which are not three-dimensional. With no knowledge of the present invention, the Examiner has applied hindsight reconstruction to assert that a person of ordinary skill in the art would have found the teaching of Tondre of specific interest in the first place.

Furthermore, the cited combination of Tondre and Rouse (plus other references) is another instance of the Examiner applying hindsight reasoning. These two references are very different in essential technical features as discussed above and in the Appeal Brief. Tondre even discloses or teaches against the use of the technology which Rouse represents.

There is no teaching in any one of the two main references (Tondre and Rouse) that they could be used in any respect in order to achieve the purpose of the present invention. In spite of the fact that the Examiner has, during the prosecution, made a large number of new searches, the Examiner has failed to even find any other solution to the object and aim of the invention. This fact alone shows that the invention, as claimed, has distinctive and patentable features for which the Examiner cannot account. The need of the invention has also been stated, for example, in Franchini (previously cited by the Examiner earlier in prosecution but not now cited in the outstanding, final rejections), but no one has still found a solution. The inventive step and the need for the claimed invention are further supported by the sales of the devices to Procter & Gamble and Akzo Nobel (see the declarative evidence of record). Appellant notes that the latter company is one of the largest European chemical companies.

Accordingly, Appellant does not concede that a *prima facie* case of obviousness has been established for any of the appealed rejections; and unexpected results and commercial success exist for the claimed invention. Despite the Examiner's Answer, Appellant respectfully maintains the outstanding rejections under 35 U.S.C. § 103(a) should be reversed. The Examiner has not given sufficient and proper reasons as to why the skilled artisan, confronted with the same problems as the inventor *and with no knowledge of the claimed invention*, would select the elements from the cited prior art references for a combination(s) in the manner claimed. Further, the experimental data of record shows that the results that are unexpected and more than what could be predicted, in addition to commercial success.

Conclusion

For the reasons advanced above, it is respectfully submitted that all claims on appeal in this application are allowable. The Examiner's Answer has not sufficiently rebutted Appellants' position.

Accordingly, favorable consideration and reversal by the Honorable Board of Patent Appeals and Interferences of the Examiner's rejections under 35 U.S.C. § 103(a) of claims 1, 2, 4-8 and 10-18 are respectfully solicited. The rejections of the Examiner are without basis, and should be reversed.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Dated: October 23, 2007

Respectfully submitted,

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